

## CLAIMS

1. An on-line attenuation device for monomode fibres, characterised in that it has, placed between two monomode fibres ( $1n$ ,  $2n$ ), at least one attenuating element comprising at least one section of multimode fibre with an index gradient ( $Gn$ ) and at least one section of silica fibre without a core ( $In$ ).

2. An on-line attenuation device according to Claim 1, characterised in that the attenuation element includes at least one other section of silica fibre without a core ( $Jn$ ), the section of fibre with an index gradient ( $Gn$ ) being placed between the sections of silica fibre without a core ( $In$ ,  $Jn$ ).

3. An on-line attenuation device according to claim 1, characterised in that the attenuating element has the same external geometrical parameters as the monomode fibres to which it is connected.

4. An on-line attenuation device according to Claim 3, characterised in that the connection consists in a welding of the ends of the fibres opposite each other.

5. An on-line attenuation device according to claim 1, characterised in that it comprises a plurality of

attenuating elements (A) disposed so as to form a ribbon or a block so as to be placed between ribbons of monomode fibres ( $R_{1M}$ ,  $R_{2M}$ ).

5           6. A method of manufacturing an on-line attenuation device for monomode fibres, characterised in that it consists in successively performing steps of connecting and breaking fibre ribbons so as to obtain two ribbons of monomode fibres ( $R_{1M}$ ,  $R_{2M}$ ) connected through the  
10           attenuation device which is obtained by breaking at least one ribbon of fibres with an index gradient (RG) and connecting to at least one broken ribbon of silica fibres without a core ( $R_S$ ).

15           7. A method of manufacturing an on-line attenuation device for monomode fibres according to Claim 6, characterised in that it includes the breaking of another ribbon of silica fibres without a core ( $R_S$ ) and the connection to the broken ribbon of fibres with an index  
20           gradient (RG) thus placed between two ribbons of silica fibre without a core.

          8. A method of manufacturing an on-line attenuation device for monomode fibres, according to claim 6,  
25           characterised in that it includes the following steps:

- collectively connecting a ribbon of  $n$  monomode fibres with an index gradient (RG) to a ribbon of  $n$  silica fibres without a core ( $R_S$ );

- breaking the ribbon of  $n$  silica fibres without a core ( $R_s$ ) so as to obtain  $n$  sections ( $I_n$ ) of predetermined length ( $L_s$ ),

5       - collectively connecting a ribbon of  $n$  monomode fibres ( $R_{1M}$ ) to the  $n$  sections of silica without a core ( $I_n$ ),

- breaking the ribbon of  $n$  multimode fibres with an index gradient ( $R_G$ ) so as to obtain  $n$  sections ( $G_n$ ) of predetermined length ( $L_g$ ),

10       - collectively connecting a ribbon of  $n$  monomode fibres ( $R_{2M}$ ) to the  $n$  sections with an index gradient ( $G_n$ ).

9. A method of manufacturing an on-line attenuation  
15 device for monomode fibres, according to Claim 8, characterised in that the last step is replaced by the following steps:

20       - collectively connecting a ribbon of  $n$  silica fibres without a core ( $R_s$ ) to the  $n$  sections with an index gradient ( $G_n$ ),

- breaking the ribbon of  $n$  silica fibres without a core ( $R_s$ ) so as to obtain  $n$  sections ( $J_n$ ) of predetermined length ( $L's$ ),

25       - collectively connecting a ribbon of  $n$  monomode fibres ( $R_{2M}$ ) to the  $n$  sections of silica without a core ( $J_n$ ).